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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PERREIRA, MELISSA JEAN	
ART UNIT	PAPER NUMBER
1618	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/771,987	SETH ET AL.	
	Examiner	Art Unit	
	MELISSA PERREIRA	1618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31,33-49,53,55,56,59,61-76,80,82 and 114-120* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31,33-49,53,55,56,59,61-76,80,82 and 114-120* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claims and Previous Rejection Status

2. Claims 31,33-49,53,55,56,59,61-76,80,82 and 114-120 are pending in the application. Claims 1,2,4-21,25,27-30,57,58,83-85,87-102,105 and 107-109 were canceled in the amendment filed 9/30/09.

3. The objection of claim 114 is withdrawn.

4. The rejection of claims 31,33-40,45-47,53,55,56,59,61-74,80,82 and 114 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn.

5. The rejection of claims 31,33-49,53,55,56,59,61-76,80 and 82 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn.

6. The rejection of claims 31,33-49,53,55,59,61-76 and 80 under 35 U.S.C. 103(a) as being unpatentable over Matharu et al. (US2003/0021841A1) in view of Buhler et al. (US 6,592,900B1) and in further view of Cheng et al. (US 6,099,859) and Oshlack et al. (US 5,472,712) is withdrawn.

7. The rejection of claims 31,33-37,39-41,43,45-47,55,56,59,61-64,66-68,70,72-74,82 and 114-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matharu et al. (US2003/0021841A1) in view of Buhler et al. (US 6,592,900B1) and in

further view of Moeckel et al. (US 5,955,106) and Cheng et al. (US 6,099,859) is withdrawn.

New Grounds of Rejection

Response to Arguments

8. Applicant's arguments filed 9/30/09 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 31,33-45,47,49,53,55,56,59,61-72,74,76,80,82,114,115 and 117-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matharu et al. (US2003/0021841A1) in view of Oshlack et al. (US 5,472,712) and in further view of Buhler et al. (US 6,592,900B1) and/or Morita et al. (*J. Controlled Release* **2000**, *63*, 297-304).

11. Matharu et al. (US2003/0021841A1) discloses the preparation of sustained-release metformin HCl tablets with a core comprising metformin HCl (50%) (i.e. 850 mg); hydrophilic erodible component (i.e. microcrystalline cellulose a non-hydrocolloid expanding agent, 32%) in an amount of from about 30% to about 70% by weight; hydrophobic component (i.e. glyceryl behenate); lubricants (i.e. magnesium stearate,

0.8%), excipients (i.e. silicon dioxide), etc. to improve the compressibility of the tablet (abstract; p1, [0011-0012]; p2, [0021-0022], [0024]; p4, [0045-0046]).

12. Matharu et al. does not disclose an extended release coating comprising a water-insoluble, water-permeable film-forming polymer species; water soluble polymer species; or a plasticizer (i.e. dibutyl sebacate)

13. Oshlack et al. (US 5,472,712) discloses a controlled release tablet comprising a core containing a therapeutically active agent coated with a coating comprising a hydrophobic polymer (i.e. ethylcellulose) (column 2, lines 60+; column 3, lines 35-56), a plasticizer (i.e. dibutyl sebacate) (column 8, lines 31+) and a water-soluble polymer/release modifying agents (i.e. polyvinylpyrrolidone) (column 12, lines 54+; column 13, lines 30-42). The controlled release coating may also include HPMC (column 12, lines 45-53; column 13, lines 43-45). The HPMC of the disclosure encompasses the water-soluble polymer (i.e. HPMC) of the instant claims and therefore is capable of the same functions and has the same properties. The release of the active agent from the controlled release formulation can be further influenced by the addition of one or more release modifying agent (i.e. pore-formers) but does not necessarily comprise a pore-former (column 11, lines 53+).

14. At the time of the invention it would have been obvious to one ordinarily skilled in the art to coat the metformin preparation of Matharu et al. with the semipermeable membrane (ethyl cellulose; polyvinylpyrrolidone, HPMC and dibutyl sebacate) of Oshlack et al. as the disclosures are drawn to the same utility, such as extended (controlled or sustained) release tablet preparations. Therefore the results would be

predictable, such as the extended release of the metformin from a tablet core and also reproducible and stable dissolution despite exposure to accelerated storage conditions (Oshlack et al. column 3, lines 2-23). The semipermeable membrane of Oshlack et al. encompasses the coating of the instant claims, see specification p8, [0026]) and therefore have the same properties and are capable of the same functions, such as being designed to provide the dissolution profiles of the instant claims.

15. Matharu et al. does not disclose crospovidone expanding agent contained in the core of the extended release pharmaceutical tablet.

16. Buhler et al. (US 6,592,900B1) discloses the use of crospovidone as a disintegrant for tablets which is a particularly suitable stabilized disintegrant (column 3, lines 24-26; column 2, lines 42-43).

17. At the time of the invention it would have been obvious to one ordinarily skilled in the art to substitute the microcrystalline cellulose non-hydrocolloid expanding agent found in the core of Matharu et al. for the non-hydrocolloid disintegrant/expanding agent (i.e. crospovidone) of Buhler et al. with predictable results, such as disintegration of the tablet core. It is obvious to those skilled in the art to make known substitutions on compounds that are similar in structure and function to observe the effects on the function of such compounds and to use the observations/data to further manipulate a compound to generate the desired effect.

18. In regards to the instant claims 56,82,114,115 and 117-120:

19. Matharu et al. does not disclose polyvinyl alcohol as a pharmaceutically acceptable excipient in the core of the extended release pharmaceutical tablet.

20. Morita et al. (*J. Controlled Release* **2000**, *63*, 297-304) discloses the inclusion of polyvinyl alcohol (PVA) to control the swelling and expansion of the core of an oral controlled release preparation (abstract). The controlled release preparations are further coated with a coating comprising ethylcellulose and HPMC (water-insoluble polymer and water-soluble polymer, respectively) (abstract; p297, paragraph 2; p300, 3.4. Design of PVA swelling controlled release system (SCRS)).

21. At the time of the invention it would have been obvious to one skilled in the art to include polyvinyl alcohol (PVA) in the core of the sustained-release metformin HCl tablets of Matharu et al. as Morita et al. teaches that PVA is an excipient used in the core of an oral controlled release preparation for controlling the swelling and expansion of the core. Including PVA in the core of the tablets in combination with the coating allows for variations in the drug release profiles (Morita et al. figs. 8, 10).

22. Furthermore, it is obvious to vary and/or optimize the amount of (compound) provided in the composition, according to the guidance provided by (reference), to provide a composition having the desired properties such as the desired (ratios, concentrations, percentages, etc.). It is noted that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

23. Claims 31,33-49,55,56,59,61-76,82 and 116 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matharu et al. (US2003/0021841A1) in view of Shah (US 4,892,742) and/or Oshlack et al. (US 5,472,712) and in further view of Morita et al. (*J. Controlled Release* **2000**, *63*, 297-304).

24. Matharu et al. (US2003/0021841A1) discloses the preparation of a sustained-release metformin HCl tablets as well as that stated above.

25. Matharu et al. does not disclose an extended release coating comprising a water-insoluble, water-permeable film-forming polymer species; water soluble polymer species; or a plasticizer (i.e. stearic acid or dibutyl sebacate).

26. Shah (US 4,892,742) discloses a controlled release pharmaceutical composition comprising a rate controlling membrane coating comprising ethyl cellulose or mixtures of ethyl cellulose and hydroxypropyl methyl cellulose; plasticizers (i.e. dibutyl sebacate, magnesium stearate) (abstract; column 2, lines 14-42; column 5, lines 1-10; claims 6-9). The composition releases the active ingredient at a slow and constant rate through the membrane coated insoluble polymeric matrix (column 1, lines 6-13).

27. Oshlack et al. (US 5,472,712) discloses a controlled release tablet comprising a core containing a therapeutically active agent coated with a coating as well as that stated above.

28. At the time of the invention it would have been obvious to one ordinarily skilled in the art to coat the metformin preparation of Matharu et al. with the semipermeable membrane of Shah and/or Oshlack et al. as the disclosures are drawn to the same utility, such as extended (controlled or sustained) release tablet preparations. Therefore

the results would be predictable, such as the extended release of the metformin from a tablet core and also reproducible and stable dissolution despite exposure to accelerated storage conditions (Oshlack et al. column 3, lines 2-23). The semipermeable membranes of Shah and/or Oshlack et al. encompasses the coating of the instant claims, see specification p8, [0026]) and therefore have the same properties and are capable of the same functions, such as being designed to provide the dissolution profiles of the instant claims.

29. In regards to the instant claims 56,82 and 116:

30. Matharu et al. does not disclose polyvinyl alcohol as a pharmaceutically acceptable excipient in the core of the extended release pharmaceutical tablet.

31. Morita et al. (*J. Controlled Release* **2000**, *63*, 297-304) discloses the inclusion of polyvinyl alcohol (PVA) to control the swelling and expansion of the core of an oral controlled release preparation (abstract). The controlled release preparations are further coated with a coating comprising ethylcellulose and HPMC (water-insoluble polymer and water-soluble polymer, respectively) (abstract; p297, paragraph 2; p300, 3.4. Design of PVA swelling controlled release system (SCRS)).

32. At the time of the invention it would have been obvious to one skilled in the art to include polyvinyl alcohol (PVA) in the core of the sustained-release metformin HCl tablets of Matharu et al. as Morita et al. teaches that PVA is an excipient used in the core of an oral controlled release preparation for controlling the swelling and expansion

of the core. Including PVA in the core of the tablets in combination with the coating allows for variations in the drug release profiles (Morita et al. figs. 8, 10).

33. Furthermore, it is obvious to vary and/or optimize the amount of (compound) provided in the composition, according to the guidance provided by (reference), to provide a composition having the desired properties such as the desired (ratios, concentrations, percentages, etc.). It is noted that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Response to Arguments

34. Applicant asserts that Matharu et al. teaches away from the subject matter of the rejected claims as it teaches that the pharmaceutical agent (e.g., metformin) is preferably present in the tablet at 30% to 70% by weight and the rejected claims recite cores containing 70% or greater by weight of metformin.

35. Matharu et al. teaches the pharmaceutical agent represents from about 10% to about 90% by weight of the formulation. Preferably, the pharmaceutical agent is present in the formulation in amount from about 30% to about 70% by weight (p1, [0013]). The amount of pharmaceutical agent of Matharu et al. encompasses the amount of about 70% to about 99% of pharmaceutical agent of the instant claims.

36. Applicant asserts that Matharu et al. teaches of a range of hydrophilic erodible component of from 30 to 70% by weight which is outside of the range recited in the claims of 3 to 25% by weight of the non-hydrocolloidal expanding agent.

37. Matharu et al. teaches the hydrophilic erodible component of from about 10% to about 90% by weight of the formulation. Preferably, the hydrophilic erodible component is present in the formulation in amount of from about 30 to about 70% by weight (p1, [0014]). The amount of hydrophilic erodible component of Matharu et al. encompasses the amount of about 3% to about 25% by weight of the non-hydrocolloidal expanding agent.

38. Applicant's assertions with regard to the references of Cheng et al. and Moeckel et al. are moot as the references were withdrawn.

Conclusion

No claims are allowed at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA PERREIRA whose telephone number is (571)272-1354. The examiner can normally be reached on 9am-5pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Hartley can be reached on 571-272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael G. Hartley/
Supervisory Patent Examiner, Art Unit 1618

/Melissa Perreira/
Examiner, Art Unit 1618